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UNITED STATES DEPARTMENT OF AGRICULTURE  
Agricultural Research Administration  
Bureau of Animal Industry

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X IMMUNIZATION SUREST CHOLERA CONTROL DESPITE VARIANT VIRUS X

Immunization against hog cholera is the farmers' surest protection against a costly visit by this dread disease which usually reaches a peak during the summer months. Farmers should have pigs treated before the disease appears in the herd or in the community. Once the disease appears in the herd losses will occur. These losses may be held to a minimum, however, if all pigs are treated promptly with anti-hog-cholera serum or serum and virus.

About 1-1/2 to 2 percent of the total hog population die of the disease each year. Outbreaks usually occur on farms where the owner "takes a chance" and does not protect his animals by using either the virus-serum treatment or vaccines. Last year virus-serum treatment was used on an estimated 34 million hogs.

On some mid-western farms last year losses occurred after treatment by the virus-serum method. A study conducted by the Bureau of Animal Industry showed that a variant of the regular virus had appeared against which regular serum did not give adequate protection. Since that time the Bureau has made a detailed study of field reports and has studied the variant in its laboratories at Beltsville, Maryland and Ames, Iowa

Fortunately, the studies reveal that this variant of the virus is unstable in nature and has a marked tendency to revert to the regular hog cholera virus. This tendency handicaps research, but may mean that the variant won't appear again for some time.



All 31 virus-serum producing plants now have completed tests suggested by the Bureau to determine whether or not the variant was present in current virus stocks. This was accomplished by selecting a standard serum which in laboratory tests would protect against regular virus but was ineffective against the variant. None of the current viruses used in these plants produced cholera in test pigs treated with the selected serum. This test indicates that the variant was not present in the serial lots tested.

As added insurance against such losses as occurred last year the Bureau suggests farmers or veterinarians who inoculate the farmers' hogs take two added precautions: (1) vaccinate pigs before they are weaned, and (2) increase the amount of serum used, if only standard dosage had been given in the past.

These recommendations are based in part on the field studies made last year. For instance, in 12 herds where the variant virus was used, pigs vaccinated before weaning remained normal. In some of these herds, however, older pigs vaccinated after weaning died. Along this same line, research findings by the Bureau show that pigs immunized against the regular virus were protected when exposed to the variant. It has been generally observed that pigs from immune sows are resistant to cholera until weaned.

Analysis of field reports also show that in herds where the dose of serum was increased as much as 50 percent above the standard no losses occurred. Other reports from the field indicated that progressively increased amounts of serum above the standard brought about decreases in



the percentage of losses. In some cases where 20 to 25 percent increase in the amount of serum was used there were breaks but not nearly so many as when only the standard amount of serum was used.

Some serums tested in the laboratory gave adequate protection when used in 5 cc. doses against regular virus, but failed against the variant when given in quantities six times that amount, which approximated the standard dose according to the weight of test pigs used. Evidence thus far obtained in the laboratory shows that increased amounts of serum are effective in preventing losses due to the variant, but the exact amount of increase required depends upon several factors, some of which are still unknown.

The standard serum dose for suckling pigs is 16 cc. An increase of 50 percent would mean a dose of 24 cc. At present cost of serum this would mean an increased cost of about 10 cents per pig. The serum dose must be increased as the pig grows. On pigs weighing 90 pounds for instance, the standard minimum dose is 36 cc. A 50 percent increase here would mean 54 cc. at a cost of roughly 25 cents more per animal. Thus, cost of treatment increases with the age and weight of pigs. Delaying treatment also increases the chances of infection in the herd.





